

Structural Plywood - engineered for a myriad of panel applications



Project: Back Yard Pavilion
Architect: Sunny Wilder
Photographer: Andrew Wuttke



Strength, durability, versatility and ease-of-use make structural plywood panels an ideal quality engineered material for any design or building project.

Plywood has the honour of being the oldest of the engineered wood products, with archaeologists finding traces of laminated wood in the tombs of the Egyptian pharaohs. Today plywood is one of the most widely used wood panel products available, utilised in a myriad of decorative and structural applications.

Structural plywood panels have all the properties that are synonymous with engineered wood - strength, durability, reliability - with the added characteristics of impact resistance, ease-of-use, and most importantly, stability when exposed to moisture and changes in temperature.

Superior strength and longer lasting

As the ancient Egyptians discovered, drying them, and then gluing them together with the grain of each layer oriented perpendicular to the previous layer, produces a wood panel with superior structural properties to products cut straight from the original log.

Structural plywood can be made from softwood or hardwood timber, and for applications where the panels are exposed to weather, it is treated with a preservative to ensure a long service life.

In the case of structural plywood, the glue used to bond the layers is a type A phenolic resin, making it resistant to both weather and stress over long periods of exposure (50+ years). At the same time, the types of veneer used contribute to the strength of the panels, with the cross-ply construction making structural plywood's shear capacity twice that of solid timber.

Plywood is available in a wide range of thicknesses, and several lengths and widths, however the standard plywood panel dimensions are: length: 2700, 2400 and 1800mm, and width: 1200mm. Other specific lengths are available for flooring and bracing applications. It is best to check what panel thicknesses and sizes are locally available before specifying the plywood in your project.

The veneer arrangement within structural plywood determines the section properties of the assembly. Specific plywood 'ID-codes' describe; the normal plywood thickness, the face veneer thickness multiplied by 10, and the number of plies in the assembly. For example, the ID code 17-24-7 describes a 17 mm thick plywood with face veneer thickness of 2.4 mm and seven veneer layers.

Structural plywood is available in a number of stress grades: F5, F8, F11, F14, F17, F22, and F27. The engineering properties of structural plywood are tabulated in both AS/NZS 2269 and AS 1720.1.

Five face veneer qualities are also available: appearance grades - A, S, B, and non-appearance grades C and D.

Cost effective & sustainable

For those in the design and building industries, structural plywood represents a highly versatile, lightweight and strong construction material, perfect for flooring, cladding, bracing, formwork and other panel applications. Its ability to be installed quickly with a minimum of tools, to cover large areas and to withstand high impact without damage, makes it an efficient and cost-effective building material.

As with all sustainable wood products, plywood is also a highly positive environmental choice compared to alternative materials; coming from a renewable resource that stores carbon and having manufacturing process low in embodied energy.

For more technical or application information for structural plywood (or other plywood types) visit www.ewp.asn.au

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